

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-24 (Canceled).

Claim 25 (Currently Amended): ~~The display apparatus according to claim 22, A~~  
display apparatus capable of detecting that an arbitrary place of a display screen has been  
pointed by a human hand or a pointing member, the display apparatus comprising:

display elements formed near intersections of signal lines and scanning lines  
respectively arranged in vertical and horizontal directions;

image pickup units which pick up incident light in a predetermined range;

D/A conversion circuits provided every a plurality of signal lines to supply pixel  
data for display to a plurality of signal lines associated therewith;

amplifier circuits which output the picked-up image data in the image pickup units  
from pixels by using signal lines that are not supplied with pixel data, while the D/A  
conversion circuits supply pixel data to signal lines in order; and

a pointer detection portion which detects a position pointed by a hand or a pointing  
member on the display screen, on the basis of the picked-up image data,

wherein whenever the image pickup units perform image pickup, the pointer detection  
portion detects an image that indicates a pointed position, and when a diameter of the image  
is maximized, the pointer detection portion judges that the display screen has been pressed  
strongly by a hand or a pointing member.

Claim 26 (Currently Amended): ~~The display apparatus according to claim 22, A~~  
display apparatus capable of detecting that an arbitrary place of a display screen has been  
pointed by a human hand or a pointing member, the display apparatus comprising:

display elements formed near intersections of signal lines and scanning lines  
respectively arranged in vertical and horizontal directions;  
image pickup units which pick up incident light in a predetermined range;  
D/A conversion circuits provided every a plurality of signal lines to supply pixel  
data for display to a plurality of signal lines associated therewith;  
amplifier circuits which output the picked-up image data in the image pickup units  
from pixels by using signal lines that are not supplied with pixel data, while the D/A  
conversion circuits supply pixel data to signal lines in order; and  
a pointer detection portion which detects a position pointed by a hand or a pointing  
member on the display screen, on the basis of the picked-up image data,  
wherein the pointer detection portion performs a plurality of product sum  
computations for successively adding image data of every scanning line, and a division  
computation conducted using a result of the product sum computations as a numerator or a  
denominator.

Claim 27 (Original): The display apparatus according to claim 26, comprising:  
a first computation circuit formed on the substrate on which the display elements are  
formed to conduct the product sum computations; and  
a second computation circuit formed on a semiconductor substrate different from the  
substrate on which the display elements are formed to conduct the division computation.

Claim 28 (Currently Amended): The display apparatus according to claim 22, A  
display apparatus capable of detecting that an arbitrary place of a display screen has been  
pointed by a human hand or a pointing member, the display apparatus comprising:

display elements formed near intersections of signal lines and scanning lines  
respectively arranged in vertical and horizontal directions;  
image pickup units which pick up incident light in a predetermined range;  
D/A conversion circuits provided every a plurality of signal lines to supply pixel  
data for display to a plurality of signal lines associated therewith;  
amplifier circuits which output the picked-up image data in the image pickup units  
from pixels by using signal lines that are not supplied with pixel data, while the D/A  
conversion circuits supply pixel data to signal lines in order; and  
a pointer detection portion which detects a position pointed by a hand or a pointing  
member on the display screen, on the basis of the picked-up image data, wherein

denoting the number of pixels in a signal line direction of the display screen by X, the  
number of pixels in a scanning line direction by Y, and the picked-up image data in an  
arbitrary pixel (x, y) (where  $0 \leq x \leq X$  and  $0 \leq y \leq Y$ ) by L(x, y),

the pointer detection portion obtains central coordinates (Ex, Ey) of the hand or  
pointing member using expression (17), and obtains widths (Vx, Vy) of the hand or pointing  
member in the x direction and y direction using expression (18).

$$E_x = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} xL(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad E_y = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} yL(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad (17)$$

$$V_x = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} (x - E_x)^2 L(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad V_y = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} (y - E_y)^2 L(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad (18)$$

Claim 29 (Original): The display apparatus according to claim 28, wherein the picked-up image data is a picked-up image subjected to image processing.

30 (Canceled).